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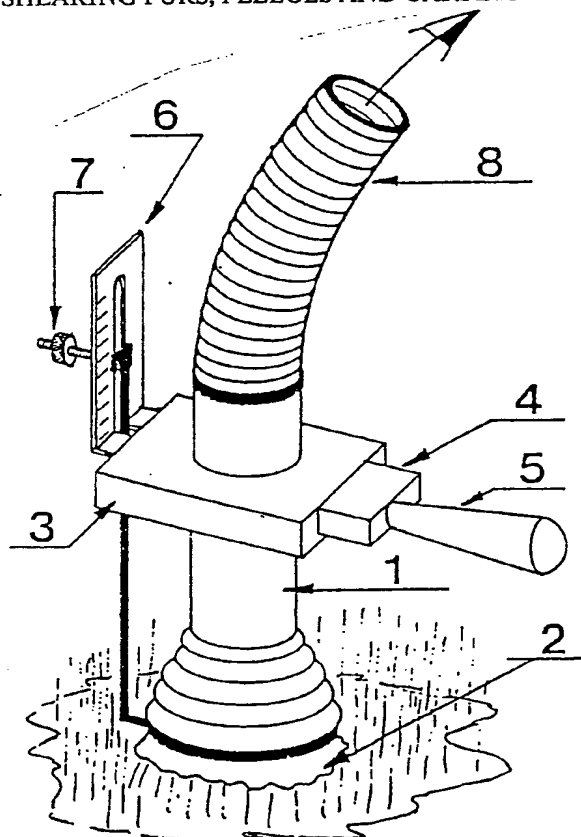
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(54) Title: A DEVICE FOR CUTTING HAIR AND SHEARING FURS, FLEECES AND CARPETS

(57) Abstract

A device for cutting hair of humans and animals as well as for shearing furs, fleeces and carpets, which comprises a tube (1) widening at one end (2) and provided at the other end with a housing (3) comprising blades (4) sliding in a horizontal way, the desired hair length being adjustable by a calibrating device (6), the device to be coupled with an air suction means (8).



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A device for cutting hair and shearing furs, fleeces and carpets.

The present invention relates to a device for the cutting of hair; it is destined for the hairstyling of humans (men as well as women), however it can also be put into practice for shearing furs and fleeces of animals, like horses and dogs, and for the treatment of fabric pile, like woven or knotted carpets and similar textile products.

Mechanical devices such as clippers for the cutting of the hair in a previously fixed length have been designed earlier.

These known devices are based up-on the principle of movable knives provided with a perforated sheetblade cutting the hair, which protrudes through said perforations.

The knives can perform a circular or a to and fro movement.

Such appliances are not generally suitable for fast and sensibly efficient hairstyling, so that a lot had still to be done by hand.

This requires, as known, a lot of time, and the consistency of the work is influenced by subjective affects.

Moreover the cut hair is difficult to collect.

For efficiency and environmental hygienic reasons a tool had to be found with which these disadvantages can be eliminated.

The novel device according to the present invention is characterized in that said device comprises a tube, widening at one end and provided at the other end with a lath<sup>of</sup> knives or blades sliding horizontally over each other, with electric drive in a housing, the desired hairlength being adjustable by the distance between the end of the tube and the knives with an adjusting screw and a calibrating device, and further that in top of the sliding knives/blades a flexible hose at said housing is coupled (by screw thread or snap closure), said hose being connected at an air suction installation.

The invention refers as well to the method of cutting or shortening of hair of the head of humans and for the cutting of animal hair, as well as for the treatment of perukes and textile fabrics, where-for a device is

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used which is further explained in the following.

The knives for this haircutting device are designed in the form of different embodiments, depending from the goal of application.

For general use a shape of rectangular sliding blade knives operating horizontally is provided.

The edges of the blades can be self-whetting.

These edges are straight or oblique.

A protecting grid prevents the scalp from contact with the blades during sucking.

10 The number of blades in the tool is arbitrary.

The distance between the blades should be large enough to let the sucked hair and air through.

The knives should be made and fixed in the housing in such a way that the rubbing is minimal so that one of them (or both, dependent on the preference for putting into practice) can slide easily over the other.

15 The blades of both knives must be sharpened from both sides so that the hair can be cut in the "to and fro" ways while sliding over each other. The knives can be used twice by sharpening the four edges of each blade, so that after long use they only have to be turned upside down instead of a replacement with new knives.

For a short haircut a scalp protector (of wire or plastic) can be placed in the housing under the lower knife, unless a safe distance between the knives and the scalp is fixed.

If this type of horizontally sliding blades is chosen for this device, 25 any of the tubes as further described can be used in combination with it. The sliding of these blades can be carried out by electromotor, which is preferable, or by hand.

The voltage of the electromotor or vibrator can be e.g. 6 V or 12 V.

Other types of blades are applicable, such as the propellor knife.

30 It is an advantage of using this type of blade in the haircutting device, because when the airsucking machine is switched on, the propellor knife will start rotating immediately with the same speed of an electro-motor. This means that there is no need for an electro-motor or vibrator and the device will be lighter.

35 Figure 4 shows a possible shape of the haircutting device with a two-blades propellor blade; other number of blades is possible.

The scalp is protected during short haircut.

The diameter of the propellor knife circle must be a few millimeters less than the diameter of the housing circle; in such a way the propellor knife

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can turn easily and freely.

If the shape of the upperside of the propellor knife is equal to the lowerside and both edges of the blades are sharpened, then the propellor knife can be used again after a long period of use by turning it upside  
5 down so that a replacement of new blades will not be necessary.

If this propellor type is chosen for the device, different types of tubes can be used for the manufacture of this device.

The rotation of this propellor knife can be effected preferably by the power of the sucked air, but it can also be obtained by hand or by electro-  
10 motor.

The voltage of the electro-motor can be 6V or 12V.

Still another shape of blade is the drumform.

It is an advantage of using such a knife in the haircutting device, because when the airsucking apparatus is switched on, the drumform knife  
15 will start turning immediately with the same speed of an electromotor; this means: there is no need for an electro-motor or vibrator, and the device will be lighter.

Figure 5 shows a possible shape of the haircutting device according to this embodiment.

20 Figure 6 shows how the blades are put together as a drumform.

Figure 7 is a side section view of one of the blades, it shows how the blades are bending and how the blades' edges can be whetted.

The number of blades of this embodiment of a drumformed device is arbitrary.

25 The diameter of the drumform circle is a few millimeters less than the diameter of the circle of the housing.

The drumformed knife must rotate easily and freely in the housing with a minimum of rubbing.

For a short haircut a scalp protector (of wire or plastic) might be  
30 placed in the housing below the drumform knife unless a safe distance between the knife and the scalp is provided.

If this type of knife is chosen for the device the most suitable adjusting tubes can also be used, and other shapes of tubes can be used provided that the lower mouth of the housing has a round shape only.

35 The rotation of this drumformed knife can be effected preferably by sucked air but it can also be obtained by hand or electro-motor.

Rotating plain blades can also be applied.

Several shapes of tubes can be used.

A telescope shape of tube is a preferable embodiment of the device accor-



ding to the invention.

The telescope tube can exist in round shape or in square shape.

Figure 8 shows the calibrator (6), the screw (7), the part of the wire with screw thread (9), the wire (10), the parts of the telescope tube

5 -like bracelets- which fit exactly into each other (1).

Adjusting the length of the telescope tube can be done by loosening the screw (7) pulling the screw up or pushing it down, until the desired length is reached and then fastening the screw again.

Another shape is the foldable tube.

10 This foldable tube can be made of rubber or plastic and in such a way, that it will be easy to push it in and to pull it out, for making the tube shorter or longer.

Adjusting the length of the foldable tube can be done by loosening the screw, then pulling the tube up or pushing it down until the desired

15 length is reached, and fastening the screw.

A spring can be used to stretch the tube.

With such devices the following advantages can be reached:

1. Equability of length of hair.
2. No hair on floor.
- 20 3. Reproducible adjustment of length of hair.
4. The saving of working-hours.
5. Avoidance of mistakes and/or irregularities.
6. Useful for professional as well as for domestic applications.
7. A simple and easy construction for maintenance and cleansing.
- 25 For the work with the device according to the invention the desired hairlength will be adjusted by the calibration with the aid of an adjusting screw.

Then the drive of the sliding knives is connected.

Then regularly the widened end of the tube is passed over the hair and  
30 so the desired surface is treated.

If desired one part can be treated in this way and for the treatment of another part another adjustment of the calibration with the adjusting screw can be selected.

On the hose, which is connected with the air suction (vacuum-cleaner) a  
35 bag or reservoir will be attached, in which the cut hair is collected. It is recommended first to wet curly hair or to stretch by means of a hairdrier.

The tube which has a widened end and which will be moved over the surface of hair to cut, is a flexible tube, which can be made for example of a

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plastic, or a light metal.

It can exist of various parts, which fit exactly into each other in length so that it can be suited for shorter and longer distance from the surface to be treated.

- 5 The tube is preferably completely or partly of transparent plastic, so that the hair during the cutting can be observed.

The mouth of the widened hose is provided of half circular or scallop shape savings, so that the hair with the air in the tube can easily be sucked, if it will be softly pushed up on the head or the surface.

- 10 The knives are moved in a horizontal direction over a set of fixed knives of similar form and dimension.

The cleft has to be sufficient so that the sucked air can pass.  
(for example abt. 7 mm).

- 15 The motor for the knives can be a small alternating current motor or a vibrator, which works on 6 or 12V, connected on a transformer, which can be placed on the power end of the wire.

The electric wire is placed in the plastic hose.

The housing is provided with a grip.

The instruments can be provided with a suspension tool.

- 20 It is also possible to furnish the device according to the invention with a battery-cell accumulator with interrupter, so that without outer power connection of the net it can be put into working.

The hose, which is fixed above the housing with the knives, is preferably of light transparent or translucent plastic, and it has to be flexible

- 25 and long enough, such that it can be bended in a manner that the cut hair can be easily sucked away, and the tool can be fixed at the wall.

The device according to the said invention is illustrated by the attached figures; examples are given of production type shapes.

The invention is not limited to the represented example shapes.

- 30 Also the sizes can be different, depending on the goal for putting it into practice.

In the attached figure 1, which gives a systematic view of a device according to the invention, the tube (1) is shown with the widened end

with scalloped edge (2), the housing (3) with blades, motor or vibrator (4),

- 35 grip (5), the calibration (6) with adjusting screw (7), and the sucking hose (8).

In figure 2 a view of the knives is shown.

Figure 3 shows the connection at the hose (8).

Figure 4 shows the propellor blade shape of knife.

Figure 5 shows the drumform of shape of the knife blades.

Figure 6 shows the arrangement of blades in drumform.

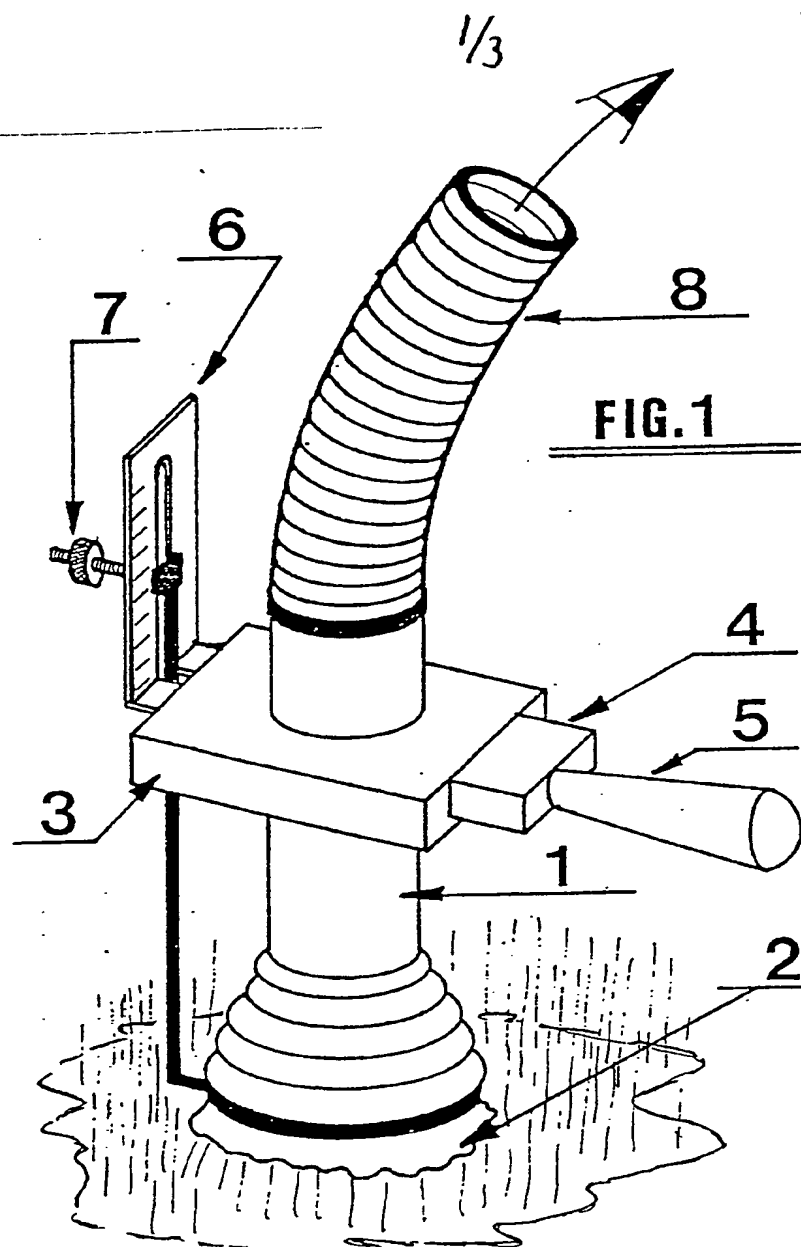
Figure 7 shows a side section of one of the blades.

Figure 8 shows the telescopic type of tube.

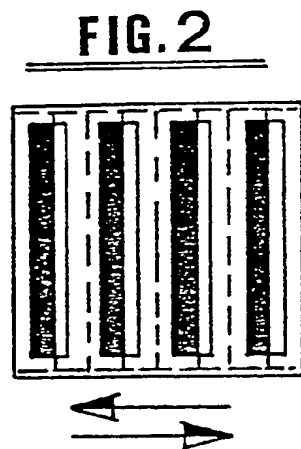


## Claims:

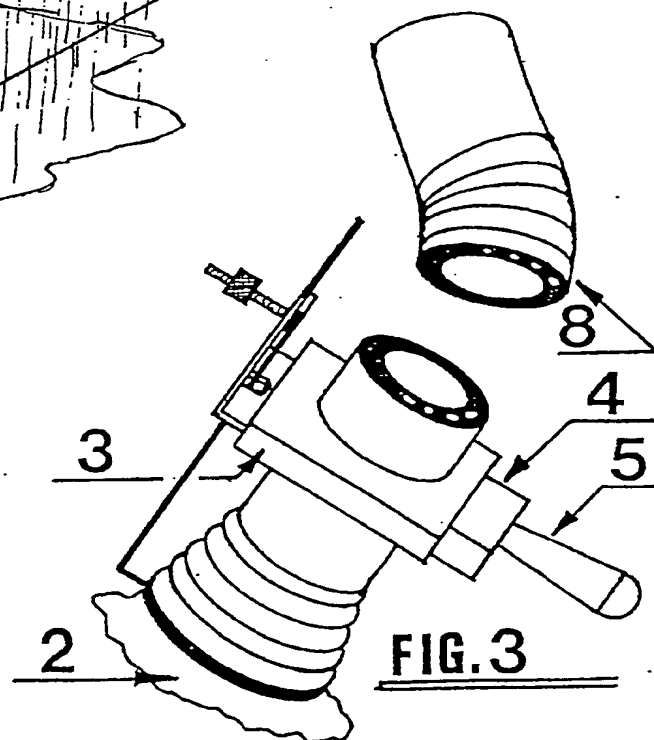
1. A device for the treatment of cutting hair of humans or animals or for the treatment of fleeces and textile materials, characterized in that said device comprises a tube, which widens to one end, provided at the other end with a lath of rectangular or rotating knife blades horizontally sliding over each other, or over a grid, with electric drive in a housing, the desired hair length being adjustable by the distance between the end of the tube and the knives with an adjusting screw and a calibrating device, and further in top of the knife blades sliding over each other a flexible hose at said housing is coupled by screw thread or snap closure, said hose being connected at an air suction.
2. A device for the treatment of hair cutting with electrically or hand driven blades, characterized in a tube (1) with a scalloped edge (2), connected with a housing (3) in which movable blades, sliding over each other or rotating, are put.
3. A method for cutting hair, fleece or fabric pile, characterized in that a device according to claim 1 is being used.
4. A product of hair, fibre or textile fabric, treated according to claim 3.
5. A device for the treatment of hair cutting, substantially as described.



**FIG. 1**



**FIG. 2**



**FIG. 3**

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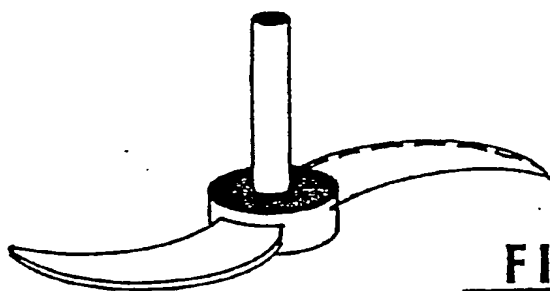


FIG. 4

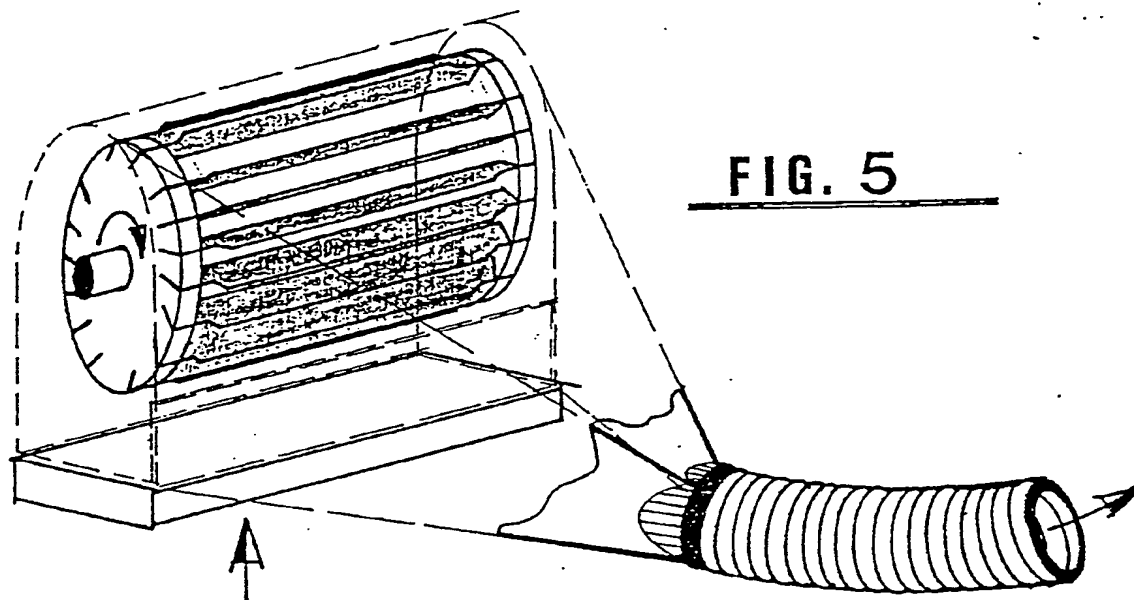


FIG. 5

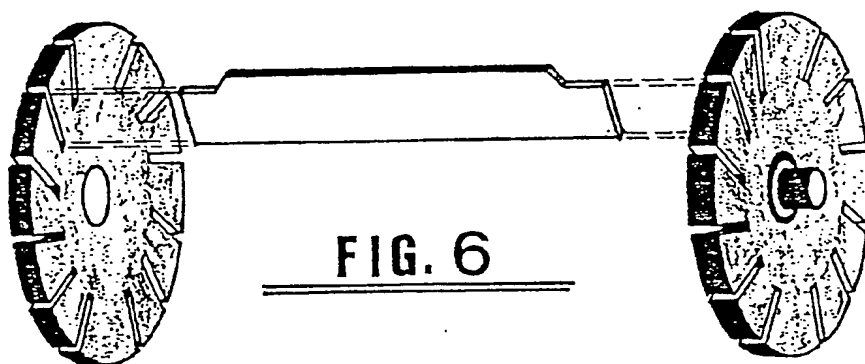
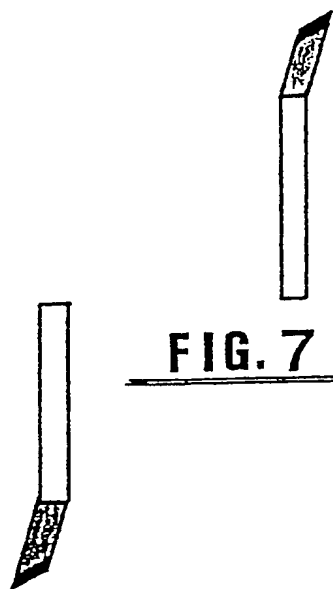
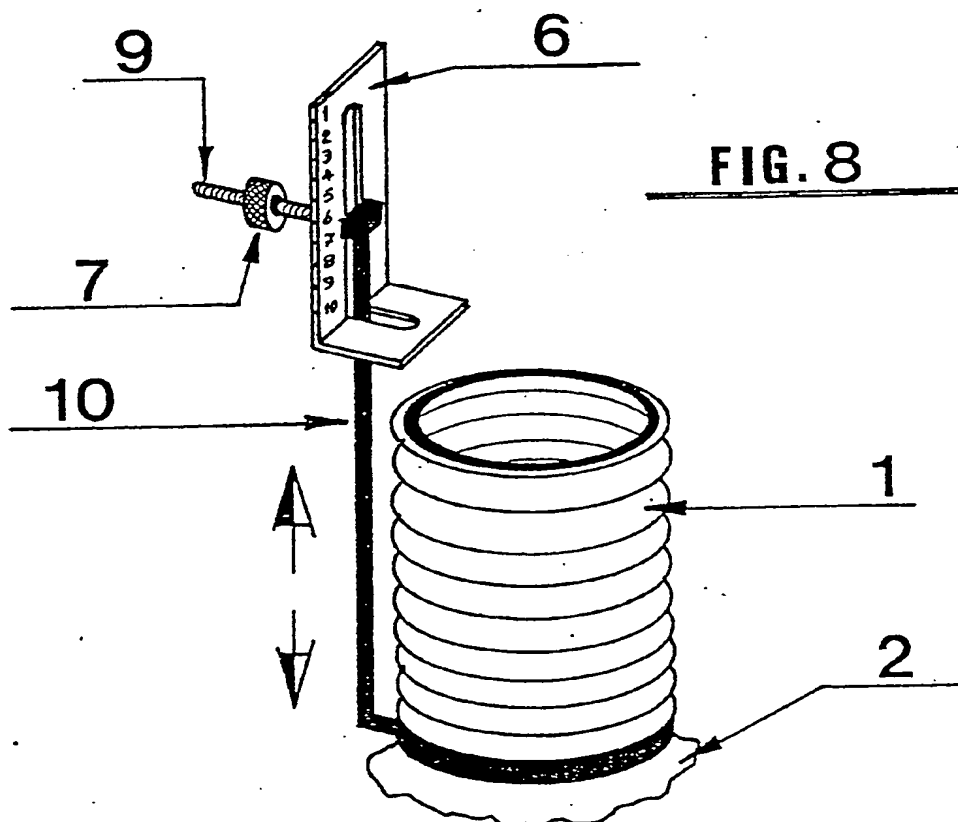


FIG. 6

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**FIG. 7**



**FIG. 8**

# INTERNATIONAL SEARCH REPORT

International Application No PCT/EP 83/00016

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (If several classification symbols apply, indicate all) <sup>1</sup>		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC <sup>3</sup> : B 26 B 19/44; C 14 B 19/00		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched <sup>4</sup>		
Classification System	Classification Symbols	
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Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>5</sup>		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <sup>14</sup>		
Category <sup>6</sup>	Citation of Document, <sup>16</sup> with indication, where appropriate, of the relevant passages <sup>17</sup>	Relevant to Claim No. <sup>18</sup>
X	FR, A, 2395114 (KANAZAWA) 19 January 1979 see the entire document ---	1-3
X	FR, A, 2400414 (BOYER) 16 March 1979 see the entire document ---	1-3
X	FR, A, 2467063 (RECCHIA + BEROLDY) 17 April 1981 see the entire document -----	1-3
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<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search <sup>2</sup>	Date of Mailing of this International Search Report <sup>3</sup>	
7th April 1983	25 APR 1983	
International Searching Authority <sup>1</sup>	Signature of Authorized Officer <sup>10</sup>	
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